

REMARKS

The second Office Action mailed on November 15, 2002 has been carefully considered and the Examiner's remarks are appreciated. Claims 1-32 are pending in the application, and are presented for examination. The foregoing amendments are responsive to the second Office Action, with support for the amendments found in the Specification, Claims, and Drawings.

Brief Discussion of the Invention

The present invention is an electrical connector and connector chip which is formed from a sheet of electrically conductive material that lies between two layers of nonconducting material. A passageway is provided which includes an opening formed in the sheet by "resiliently-biasing" fingers centripetally extending into the passageway. When an electrically conductive pin is inserted into the passageway, the resiliently-biasing fingers "cantileverly deflect" in the direction of pin insertion, and the opening adapts to the diameter of the pin. Due to the cantilever deflection, the periphery of the opening applies a normally-directed friction force to the sides of the pin, and thus holds the pin within the opening and in contact with the sheet.

Brief Discussion of U.S. Pat. No. 4,700,214 to Johnson

U.S. Pat. No. 4,700,214 to Johnson discloses electrical circuitry comprising a plurality of layers, each layer including one or more electrical pathways and insulation for insulating at least part of one layer from another layer. The pathways comprise repeating flower-shaped patterns having eight wedge-shaped sections grouped in pairs to form quarter sections and an opening at the center of the flower pattern. As shown in Figure 7 and 8 of Johnson, a backerboard is

positioned underneath a conducting layer (comprising the pathways), with a circular hole of the backerboard aligned with the hole of the flower-shaped pattern. A pin is then forced through the center of the flower-shaped pattern and the circular hole of the backerboard to thereby crimp the wedges of the flower pattern around a perimeter edge of the backerboard hole, and into the backerboard hole between the pin sidewall and the sidewall of the backerboard hole. In this manner of force-fitting, an electrical connection may be established between the pin and the electrical pathways.

Discussion of the Office Action

In the second Office Action of November 15, 2002, the Examiner rejected claims 1-9, 11-13, 15, 17-31 under 35 U.S.C. §102(b), and he rejected claims 10, 14, 16, and 32 under 35 U.S.C. §103(a).

Discussion of the Rejections under 35 U.S.C. §102(b)

Claims 1, 15, and 23 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 4,700,214 to Johnson. Applicant has amended claims 1, 15, and 23 to particularly point out the distinctions between Johnson and the claimed invention. Each of claims 1, 15, and 23 have been amended to include the limitation of a resiliently-biasing means for holding the pin in contact with the sheet and for restraining the pin from translating with respect to the chip. As shown in Figure 3 of the drawings, the “resiliently-biasing” aspect of the means for holding, e.g. the centripetally extending fingers 20, 23 (and 21, 25 not shown), enables it to be deflected in a resilient manner when a pin 35 is inserted through the opening 27, without experiencing “crimping” or otherwise permanently deforming. In contrast, the Johnson patent establishes an

electrical contact between a pin and an electrical pathway by crimping the wedge-shaped sections to permanently bend the sections into a conforming shape. The crimped portions formed in this manner are used to produce a snug forced-fit between the pin sidewall and the sidewall of a circular hole of a backerboard used in performing the crimp. It is appreciated however, that the crimped portions do not themselves exert the normally-directed friction force. Rather, it is the appropriately dimensioned hole of the backerboard which exerts the friction force necessary for a snug force fit. Therefore, removal of the backerboard after crimping, as suggested at column 7, lines 35-38 of Johnson, would likely affect the contact and consequently the friction force exerted on the inserted pin. The “resiliently-biasing” means for holding of the present claims 1, 15, and 23 obviate these concerns by internally storing the cantilevered deflection energy, which is necessary to provide the normally-directed friction force against a pin. Thus, it is respectfully submitted that the rejections to claims 1, 15, and 23 are no longer appropriate in view of MPEP §2131 as follows in part:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”

and should be withdrawn.

Claim 18 was also rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 4,700,214 to Johnson. Similar to the amendments in claims 1, 15, and 23, method claim 18 has been amended to include the following underlined language, “mechanically holding the pin by the cantilevered deflection of a resiliently-biasing means when the pin is inserted into the passageway, wherein the mechanical hold establishes and maintains an electrical connection between the pin and an electrical element embedded in the chip.” As shown and supported by

Figure 3 in the drawings, the “resiliently-biasing means” undergoes a “cantilevered deflection” when a pin is inserted through the opening, which consequently functions to mechanically hold the pin in the passageway. Thus it is believed that the “cantilevered deflection” language further distinguishes present claim 18 from Johnson, which shows a crimping deformation, as discussed above. Applicants respectfully submit that no new matter is added by these amendments. The phrases “resiliently-biasing” and “cantilevered deflection” are well known to those skilled in the mechanical arts, as describing the deflected motion depicted in Figure 3.

Additionally, and in view of the amendments to the aforementioned claims, it is respectfully submitted that claims 2-9, 11-13; claim 17; claims 19-22; and claims 24-32 are also in condition for allowance as being dependent on now allowable base claims 1, 15, 18, and 23, respectively. Therefore, the 102(b) based rejections of claims 2-9, 11-13, 17, 19-22, and 24-32 should likewise be withdrawn.

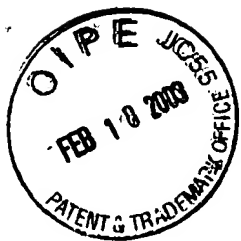
Discussion of the Rejections under 35 U.S.C. §103(a)

Claims 10, 14, 16, and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,700,214 to Johnson. In view of the amendments to claims 1, 15, and 23 above, it is also respectfully submitted that the 103-based rejections to claims 10, 14, 16, and 32 are now in condition for allowance as being dependent on now allowable base and/or intervening claims, and in view of MPEP §2143.03 as follows in part:

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.”

Johnson, however, does not disclose, teach, or suggest the “resiliently-biasing” means for holding as discussed above, and as required by claims 10, 14, 16, and 32.

Furthermore, and with respect to claim 10 in particular, Johnson does not teach or suggest that the top hole diameter is smaller than the bottom hole diameter. In the present invention, the larger diameter of the bottom hole provides the space to enable the downward cantilevered deflection of the resiliently-biasing holding means. In contrast, it is believed that enlarging the diameter of the bottom hole greater than the top hole in Johnson would prevent crimping from taking place along the perimeter of the circular backerboard hole, and thus destroy the intended function of the hole, i.e. to force fit a pin therein.



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Summary

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Having amended the claims, as discussed above, Applicant respectfully submits that Claims 1-32 are in condition for allowance. Applicant respectfully requests allowance of claims 1-32.

In the event that the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, he is respectfully requested to initiate the same with the undersigned at (925) 422-7274.

Respectfully submitted,

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By: 

James S. Tak
Attorney for Applicant
Registration No. 46,367

Lawrence Livermore National Lab
7000 East Avenue, L-703
Livermore, CA 94550
TEL: (925) 422-7274
FAX: (925) 423-2231